

INTEGRATED DEVICE FOR READING

Abstract

The present invention relates to an integrated device for reading, which can integrate
5 card reader with disk driver without changing the size of frame of prior disk driver, and can
be installed where the prior disk driver is originally installed so that the card reader
becomes a standard device for the computer. Therefore, practicability, functionality and
value can be increased.

10 Fig.2

Field of the invention

The present invention relates to an integrated device for reading, particularly to an
integrated device which integrates disk driver with card reader so that it can be installed in
15 the frame of the computer.

Background of the invention

Memory cards are used in digital camera(DSC), digital video camera, personal digital
assistant(PDA) and digital recording device etc to store data and image. Widely-used
20 memory cards are divided into: Compact Flash card (CF), MircoDriver card (MD),
MultiMedia card (MMC), Smart card (SM), Secured Digital card (SD), Memory Stick card
(MS) etc. If a user wants to store the data in a memory card in a computer so that he can do
subsequent image processing, storing, playing or printing, the following ways are usually
used:

25 1. A signal wire is used to connect the digital devices to the computer, then the
computer stores the data through driver program in the digital devices. The storing speed in
this way is too slow, especially the digital camera. A high-capacity memory card (such as

512M, 1G or a larger one) is needed to reach a high pixel and to store a large amount of photos. The speed is very slow if data of Such a high capacity is read and stored through a wire.

2. Card readers are used to read data. Now card readers are all additionally configured.

5 They are connected to the mainframe in an independent or inbuilt way. And the user can operate the memory cards as memory devices of the computer to read and store the data. Card readers are popular because of high reading speed and convenience. However, card readers that are connected to computer both in inbuilt or external way have the following disadvantages: occupying a large space and complex dismounting. Therefore they are
10 inconvenient in use.

Also, some manufactures now install a card reader in the printer. Therefore the printer can read the data in the memory card to print directly without connecting to the computer, however, the data read by the printer can not be transmitted to the computer to store or make further processing so that pleasure of image processing is decreased.

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Object of the invention

It's an object of the present invention to provide an integrated device for reading, which can integrate card reader with disk driver without changing the size of frame of prior disk driver, and can be installed where the prior disk driver is originally installed so that
20 the card reader becomes a standard device for the computer. Therefore, practicability, functionality and value can be increased.

Said disk driver is a thin floppy disk driver. The floppy disk driver and the card reader are overlapped in the integrated device, which has standard floppy disk frame. The integrated device comprises two rows of slots on the front panel, one row corresponds to
25 the disk socket in the floppy disk driver, the other row is used to receive memory cards.

It's another object of the present invention to use original frame of floppy disk driver and the original position in the computer. And it is unnecessary for the computer to add a new socket to install card reader so that cost can be reduced, and it doesn't occupy extra space, and mainframe of the computer will have a higher expanding ability.

Brief description of the drawings

Fig.1 is a three-dimensional diagram of an integrated device according to the present invention;

5 Fig.2 is a three-dimensional exploded diagram of an integrated device according to the present invention;

Fig.3 is circuit diagrams of receiving part and memory card controller of the card reader;

10 Fig.4 is an outside three-dimensional view of the integrated device installing in the computer;

Fig.5 is the diagram of the first embodiment.

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|----|--|
| 10 | integrated device |
| 20 | frame |
| 21 | front panel |
| 15 | 211 slot |
| | 212 slot |
| | 213 slot |
| | 214 secure part |
| | 215 hole |
| 20 | 216 depression |
| | 22 side panel |
| | 221 front dependent panel |
| | 222 back dependent panel |
| | 223 the same bolt hole as bolt hole 31 |
| 25 | 224 dependent panel |
| | 23 backboard |
| | 231 protrude |
| | 30 the floppy disk device |
| | 31 bolt hole |

	32	release key
	33	transmission element
	40	card reader
	41	socket
5	42	socket
	43	memory card controller
	44	connection wire
	50	mainframe
	60	bus circuit board
10	70	bus

Detailed description of the embodiments

Fig.1 shows a three-dimensional diagram of an integrated device according to the present invention; Fig.2 shows a three-dimensional exploded diagram according to an integrated device of the present invention; wherein the frame 20 of the integrated device 10 comprises:

Front panel 21, comprises two rows of slots; slot 211 corresponds to the disk socket in the floppy disk driver 30. There are at least one slot in the other row, e.g. 2 slots 212, 213 in the this embodiment, and slots 212, 213 are respectively used to receive CF/PCMCIA, SM, MS, SD, MMC, xD cards to insert; the front panel 21 is installed inside of the frame 20 with a secure part 214 on it.

Holes 215 are provided under the slots, which are used to receive display lamps of floppy disk driver 30 and card reader 40. The lamps are used to display the working states of the floppy disk driver 30 and card reader 40. And a depression 216 is provided at the top of the front panel 21.

Side panels 22, which are provided in symmetry. Front dependent panels 221 and back dependent panels 222 are provided at two ends of the same side of the side panels 22. The same bolt holes 223 as bolt holes 31 in the floppy disk driver 30 are provided corresponding to bolt holes 31. Straight dependent boards 224 are provided at the bottom

of the side panels 22.

Backboards 23, thereon a protrude 231 with bolt hole is provided to correspond to the card reader 40 to fix the card reader 40. Therefore sockets 41, 42 on the card reader 40 can correspond to slots 212, 213.

5 The card reader 40 is a bare board which has 2 sockets 41, 42, which is used to receive memory cards such as CF/PCMCIA, SM, MS, SD, MMC and xD etc. Fig.3 shows a circuit diagrams of receiving part and memory card controller of the card reader. The top right corner of Fig.3 shows socket 41 to receive CF, Mirco driver/PCMCIA cards, and the below right corner of Fig.3 shows socket 42 to receive SM, MS, SD, MMC, xD. The two
10 sockets 41 and 42 are connected to the memory card controller 43. The memory card controller 43 reads signals from sockets 41 and 42 and integrated them to an USB signal (or IDE, IEEE1394 or PCI signals). Then the signals are transmitted to the computer through a connection wire 44.

An end of the sockets 41, 42 of the card reader 40 is inserted in the secure part 214,
15 the other end is arranged on said dependent boards, and the underside is arranged on the protrude 231 so that the card reader 40 is secured in the frame 20. At the same time the two sockets 41, 42 of the card reader 40 can correspond to slots 212, 213 of the front panel 21.

The floppy disk driver 30 is overlapped above the card reader 40. Two ends of the floppy disk driver 30 are on the front and back dependent panels 221, 222. The release key
20 32 of the floppy disk driver 30 is arranged in the depression 216 of the front panel 21. Then the same bolt hole 223 as bolt hole 31 and the bolt hole 31 are secured by a secure element 42. Thus the floppy disk driver 30 and the frame 20 are secured. At the same time the slot to receive floppy in the floppy disk driver 30 can correspond to the slot 211.

In addition, a bus circuit board 60 is provided on the back dependent panel 222
25 (Fig.2). And a bus 70 connects the floppy disk driver 30 to the mainframe 50 to provide power supply for the floppy disk driver 30. The bus circuit board 60 can be omitted if USB floppy disk driver is used.

In addition, a transmission element 33 can be provided at the back end of the floppy disk driver 30. And a bus 70 connects the floppy disk driver 30 to the card reader 40, and
30 to the mainframe 50 through the card reader 40 to provide power supply for the floppy disk